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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,178	12/07/2001	John Loyd Spence	PK-US015147	6911

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EXAMINER

PICKARD, ALISON K

ART UNIT PAPER NUMBER

3676

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,178

Applicant(s)

SPENCE ET AL.

Examiner

Alison K. Pickard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14 and 16-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14 and 16-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 19 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 8, 9, 12-14, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sumida (5,954,343).

Sumida discloses an S-shaped metallic seal comprising a first annular end section 46 having a first sealing surface 54 (66) facing a first direction and contacting a first member to create a first annular sealing dam. The seal comprises a second annular end section 49 having a second annular sealing surface 55 (67) facing a second direction, opposite the first, and contacting a second member to create a second annular sealing dam. An annular center section 53 extends between the first and second end section to form a ring. The center has a central passage and a center longitudinal axis. The center section has a frusto-conical shape. The first and second end sections are contiguously arranged at opposite ends of the center section. The first and second ends sections are convexly curved surfaces that are inverted with respect to a center plane perpendicular to the axis. Any deformation of the seal is due to torsional stress (see Figure 2 and col. 3, lines 45-55). As seen in Figure 2, the first and second directions of the sealing surfaces are arranged parallel to the center axis. In Figure 6, the first and second directions of the sealing surfaces are arranged to face radially (or perpendicularly) relative to the axis. In either embodiment, the first and second sealing surfaces are in planes that are

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substantially parallel to each other. The sealing surfaces are located closer to the midpoints of the convex surfaces. The seal is formed of a corrosion resistant material such as steel or tin.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 6, 7, 10, 11, 16-19, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida.

Regarding claims 4, 10, and 23, while it appears that the sealing surfaces are spaced apart substantially equally both axially and radially, Sumida does not specifically disclose that the sealing surfaces are spaced by a first distance measured parallel to the axis equal to a second distance measured perpendicular to the axis between the sealing surfaces. This is considered a design choice.

Regarding claims 6, 18, and 21, Sumida does not disclose that the curved surfaces extend through an arc of about 60 degrees. This is considered a design choice.

Regarding claims 7, 11, 17, and 22, Sumida does not disclose that the center section has a slope of about 45 degrees with respect to the axis. This is considered a design choice.

It is not considered inventive to discover the workable or optimum ranges by routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the sealing surfaces spaced by a first distance measured parallel to the axis equal to a second

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distance measured perpendicular to the axis between the sealing surfaces, the curved surfaces extend through an arc of about 60 degrees, and the center section have a slope of about 45 degrees with respect to the axis as matter of choices in design.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4, 6-14, and 16-23 have been considered but are moot in view of the new ground(s) of rejection.

Sumida discloses an S-shaped metallic seal. The seal is spring-like as depicted in Figure 2 and therefore, any deformation is due to torsional stresses. As seen best in Figures 2 and 6, the sealing surfaces are located closer to the midpoints of the convex curves than to the center section or the free ends.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 703-305-0882.

The examiner can normally be reached on M-F (9-6:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-8729327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-1113.



Anthony Knight
SPE
Art Unit 3676

AP
May 30, 2003